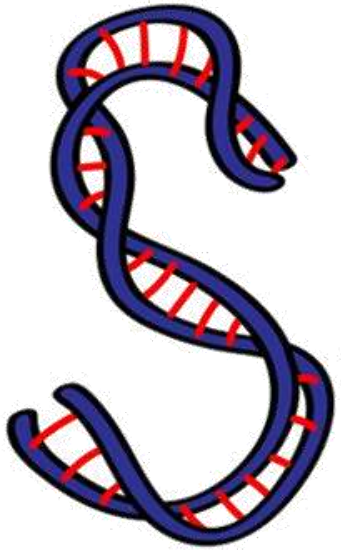
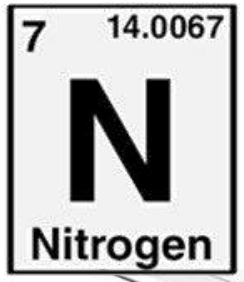





7
14.0067
N
Nitrogen



Danger
Electricity

In this pack there are 6 separate learning activities.

It is up to you when you visit your Topic learning, but complete all 6 lessons to become an ‘Electrical Expert’!

1

Talk to a helper and discuss the following…

> What is electricity?

>What kind of things do you imagine when you hear the word?

>What does the word electricity mean to you?

>Think of as many things as you can that need electricity to work.
Now, name as many Sources of electricity (power) as you can.

You might find this tricky, as we haven't learnt about electricity in class before but you can use this video to help you to answer the question… WHAT IS ELECTRCITY?

https://www.bbc.co.uk/bitesize/topics/z2882hv/articles/zcwnv9q

Now, follow the animation (using the blue buttons) to explore the different power sources:

http://www.switchedonkids.org.uk/what-is-electricity .

Use what you have discovered to create your own ‘where electricity comes from’ diagram/s.

Find out more about what power really means by watching this short clip (there is also a little activity for you to do to test your understanding):

https://www.bbc.co.uk/bitesize/topics/z2882hv/articles/ztyjmsg

You will now be looking at the key terms:

Producer and Consumer

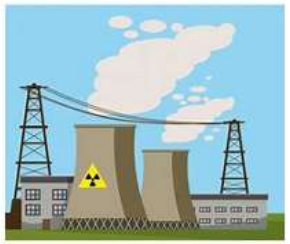
>Have a chat with a learning buddy about what you think these two words mean when we are learning about electricity?

Can you sort the following items into two groups by classifying them as a:

Sources of power	Consumers of power
1) Producer of Electricity (source of power)	2) Consumer of Electricity (user of power)

lightbulb

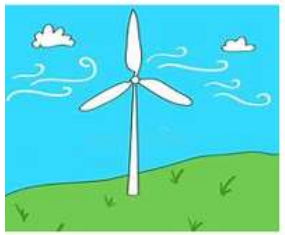
Car



Nuclear

Sun

Gas



Wind

Oil

Fridge

Television

Chainsaw

Coal

Kettle

2

1. With a learning partner list a few objects that you think are battery-powered, before listing others that you believe are mains powered.

- What is different about the objects on each of your lists?

2. ‘battery-powered objects are generally smaller, portable and often need to be charged; where as mains-powered objects are generally larger, not portable and need to be plugged into a mains socket.’

- Can you draw a diagram to represent this?

Why not try… taking your learning outside , using chalk to draw your diagram on the pavement?

Fact…

Did you know that batteries are powered by the chemicals inside of them that react to produce a current?

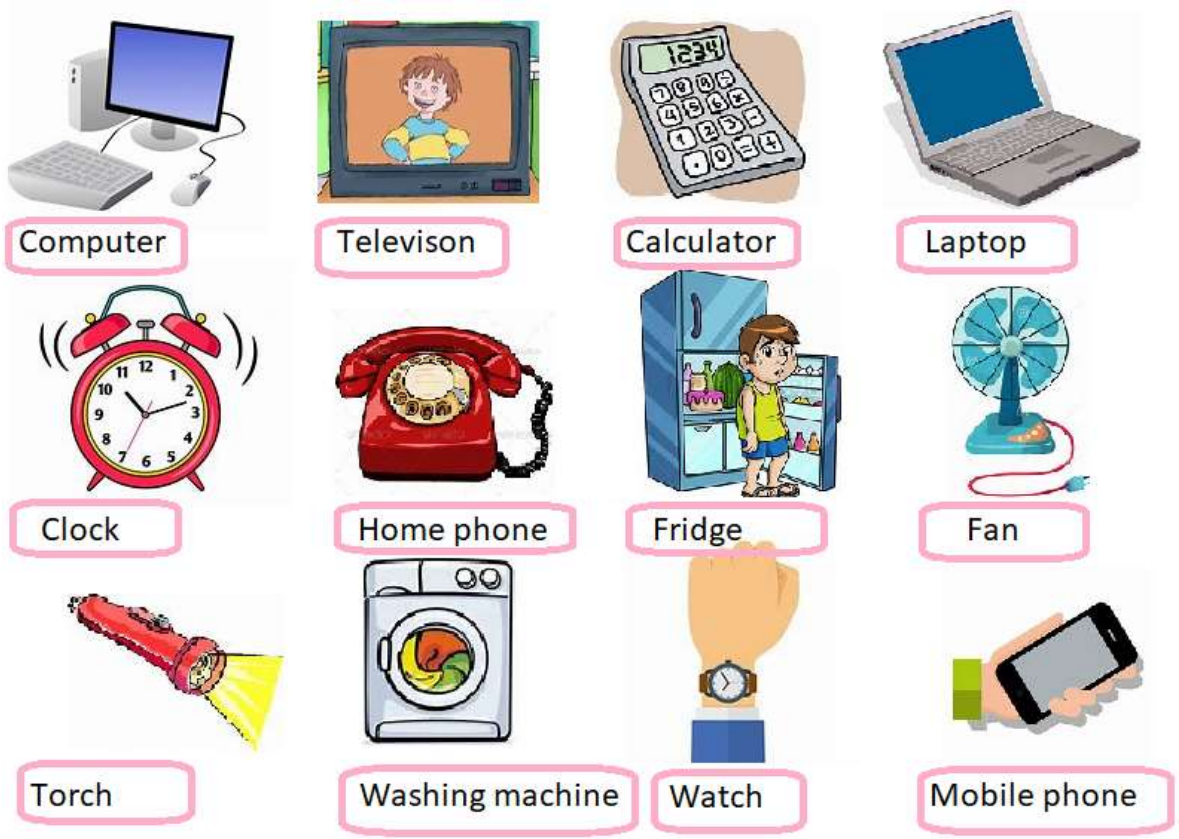
Different batteries have different voltages…the higher the volts, the more power the battery has.

The voltage in batteries is much lower than mains and this makes them less dangerous, though it does not make them completely safe, so we still should not play around with them.

Watch this video on batteries… https://www.bbc.co.uk/bitesize/clips/zh79wmn , before using what you learn to classify the objects into two categories:

Mains powered	Battery powered

1. mains-powered objects
2. battery powered objects



3

Now, it's over to you …Year 4's newest and coolest scientists…

Watch the following clip about **conductors and insulators** of electricity:

https://www.bbc.co.uk/bitesize/topics/z2882hv/articles/zxv482p

You can present your learning however you like.

Some ideas may include a writing in role as a scientist, cooking up a poem, creating a poster or you may even prefer to just tell somebody and talk through your learning.

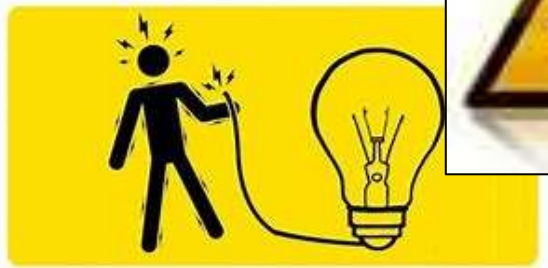
Remember to explain what, how and why.

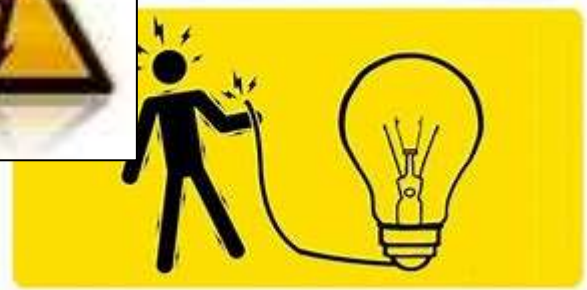
Challenge: When scrolling down from the video clip, you will find a quiz.

Have a go at separating the insulators from the conductors and see how you do.

4

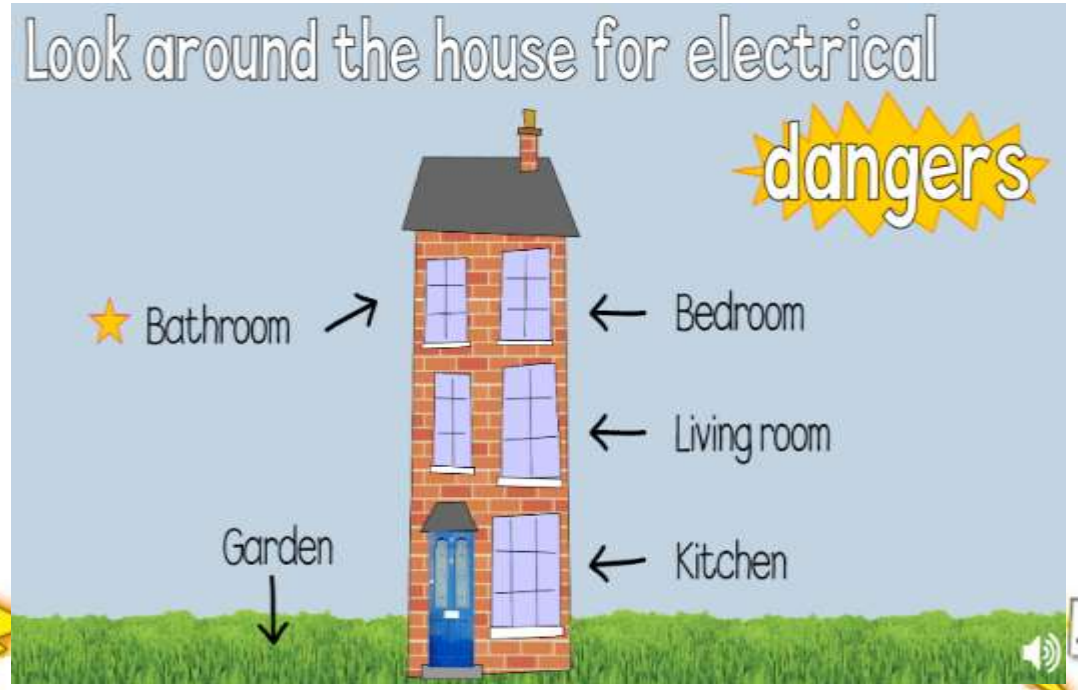
ELECTRICAL SAFETY





Follow the ‘Electrical safety in your home’ link to explore todays topic.

http://www.switchedonkids.org.uk/electrical-safety-in-your-home



Using what you learnt from the animation, create an information leaflet.

Think about your audience…

You may wish to put the information together for a friend or family member to inform them about how to keep safe from electrical dangers in the home.

You could even post it to a neighbour to inspire them with your electrical expertise?!

5

How is Electricity created?

Here's Curious Cat with information all about coal, oil and even rubbish powered power stations.

https://www.bbc.co.uk/teach/class-clips-video/science-ks1ks2-how-is-electricity-made/zfhfgwx

Your task is to create a dialogue of questions and answers between a child visiting a gas fuelled power station, with an expert who works there (just like in the video clip).

Use interview to outline the process of generating electricity in a gas fuelled power station (just like the one in the video).

An interview is very much like a conversation, so try to make it as interesting as possible for the other person as well.

What do you already know about the person? Use this information to come up with the relevant questions.

Avoid questions that can be answered with 'yes' or 'no' as that can be quite boring.

Make the questions and answers clear by writing your names or the letters 'Q' and 'A' before them.

Think about the type of person you are interviewing and try to judge whether you should use formal or informal language and if your questions are appropriate for them.

1. Burning fossil fuels (oil, gas, coal) at power stations

2. Using wind power generated by wind turbine

As you already know, electricity can be created in a variety of ways; this includes…

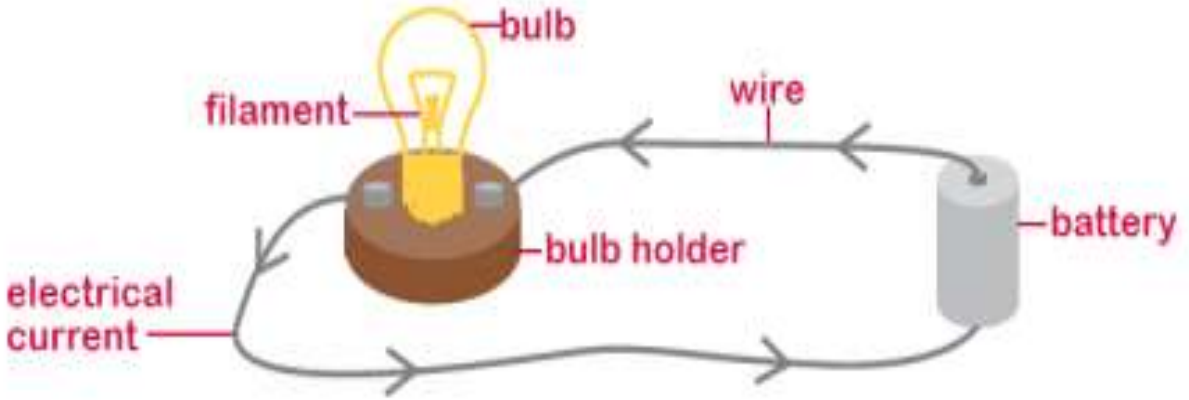
3. Using solar power generated by the sun,

4. Using water power (sometimes called hydropower) generated by running or falling water.

Electricity can also be stored in batteries (sometimes called cells).

When back at school, we will learn about **simple series electrical circuits**, as illustrated by the diagram below.

These circuits are known as **‘simple’** because the circuit involves a single wire running from a battery to a bulb and back again.



We will use wires to link the battery to the bulb but to be able to do this, you need to know all about the key terms and equipment involved…

Cell	Battery	Circuit	Component
Conductor	Current	Insulator	Voltage
Fuse	Switch	Resistance	Energy
Pylon	Turbine	Lightning	Generator

ACTIVITY

Research each of the key words and come up with your own definition. You can use the internet, dictionary or even a grown up to help you.

Once you have paired each card, you could even turn this into a card game?

You may wish to take your learning even further and create your own wordsearch… us year 4's do love a wordsearch!